

# THE FUTURE OF VOICE-ACTIVATED TECHNOLOGY FOR LAW ENFORCEMENT

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This Command College project is a FUTURES study of a particular emerging issue in law enforcement. Its purpose is NOT to predict the future, but rather to project a number of possible scenarios for strategic planning consideration.

Defining the future differs from analyzing the past because the future has not yet happened. In this project, useful alternatives have been formulated systematically so that the planner can respond to a range of possible future environments.

Managing the future means influencing the future, creating it, constraining it, adapting to it. A futures study points the way.

The views and conclusions expressed in the Command College project are those of the author and are not necessarily those of the Commission on Peace Officer Standards and Training (POST).

## ***The Future of Voice-Activated Technology for Law Enforcement***

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Voice-activated technology is here, and its popularity has been growing with each passing day. We are creatures of comfort and convenience, and those of us in law enforcement are not excluded from that category. Some of us recall the days when there were no computers or the elaborate electronics that we have come to know and experience today. Our encounters of the past twenty-plus years have shown us the values and benefits of such technology-based systems; and they have given us some assurances that these values and benefits will continue to evolve and maintain a foothold in our industry, despite any efforts on our part to dissuade or ignore them.

Yes, we have applied some of these technologies in our various operations when we identified their needs and acquired the resources necessary to put them in place. Most often, the underlying motivation to acquire some of these various systems was to keep up with the Joneses, or make some attempt to be the agency with the most toys. In some cases, we have been forced to implement some of these programs, or run the risk of being deprived the ease of access and/or use of timely information. Despite the motivation for the implementation of some of these technology-based systems, more often than not, our organizations have become more efficient and productive. As we continue to be faced with this never-ending evolution of the various technologies, we should not be content with the status quo and allow the benefits of such technologies to pass us by.

Successful and effective patrol officers must be multi-skilled and able to divide their attention on a variety of tasks just to get their patrol vehicles out of the parking lot and onto the street. When seated in their patrol vehicles, officers are faced with an array of equipment with which they must become proficient. Of course, these equipment lists vary from department to department, based on resources and needs. However, just the basic load of equipment for a patrol vehicle generally consists of a multi-channel radio, mobile data terminal or computer, assorted switch panels for all the lights and siren, and a shotgun. Additional accessories could be: a cell phone, magnetic tape readers, radar guns, printers and sound and video equipment.

Now consider the talent and skill that is required to manipulate any and all of this equipment while driving. To put it in perspective, we have all recently read news articles or viewed news stories about the dangers of using cell phones while driving. Cell phone use while driving has often been compared to the likes of drunk drivers and the problems they create on our highways. Now take that comparison and add the manipulation and use of a multi-channel radio, an assortment of lighting configurations, a siren, and a computer with a keyboard. As one could comfortably assume, our officers place themselves at increased risk because their attention is divided and the focus of driving safely is diminished. As we continue to add these various pieces of equipment to our fleet of patrol vehicles, we will surely reach a saturation point where the officer's safety could be at risk.

This is where voice technology may have some benefit. Rather than have the officer manipulate some of these tasks by hand and sight, he could voice his command to the on-board mobile data computer. The computer would process the request and deliver the result without the officer's ever using the keyboard or taking his eyes off the road. The computer would

electronically manipulate the equipment, such as a siren, some lighting configuration, or whatever system can be accommodated by the computer system.

Another example where voice technology could be used is the running of license plates while the officer patrols his beat. The officer could activate the database system by voice and announce the license plate number to the mobile data computer. The computer would acknowledge the inquiry and process the information. Once the information was processed, the computer would announce the results. This entire process could be accomplished while the officer continues to focus on his environment, thus improving safety for all.

Another voice technology application that can be of great benefit to our patrol officers is voice-activated real time transcription of police reports. Currently, patrol officers at Buena Park Police Department prepare police reports by handwriting the report face sheets. The narrative of the report is voiced into a mini-cassette tape recorder. The mini-cassette tape is placed in a large envelope with the completed report face sheets, and the package is forwarded to our transcriptionists for processing. These completed reports are then forwarded to the on-duty Watch Commander, who reviews and approves the reports. Most often, the officer will never see this report again until a copy is printed out for review in preparation for court. Often, this is the first time the officer discovers that there are errors in the report, or that there is additional information that should have been included in the initial report. The lack of convenience for the officer to review his police reports prior to submission for approval and processing is the obvious weak link in our report-writing system.

As a result of viewing actual voice-activation applications in operation and interviews with several vendors and subject matter experts, I believe the use of voice technology could strengthen this weakness in our report writing system. The police report face sheets can be

programmed into the department computer network and made available from any computer. The officers would then have the ability to pull up any of these report face sheets from the computers in their patrol vehicles. They can enter the face sheet information by voice commands or by using the keyboard. The officers can then dictate the narratives of their reports directly into the mobile data computer through an external microphone, or into a pocket digital recorder that can be downloaded into the mobile data computer. The mobile data computer would display the text for viewing on screen, and/or read back the report in the officer's voice.

This gives the officer the opportunity to listen to the report to determine its thoroughness and accuracy. As the officers become more and more proficient with the system, they can make any corrections on the spot; and when they feel the report is completed, they can electronically send it to the on-duty Watch Commander for review and approval. This entire process can be conducted using voice-activated commands or the keyboard. Such an option affords the officer the opportunity to work in a hands-free environment and improves his or her ability to keep an eye on his or her surrounding environment while conducting routine business.

With the correct hardware configuration, some aspects of these two applications that have been briefly described could be put into operation in today's patrol vehicles. Several companies are continuing to develop this technology for other industries, and the future looks very promising for major improvements. These programs could be easily adapted for use by law enforcement. surely there are a number of additional applications that can be incorporated into day-to-day operations; and those can be considered as they are made available and determined to be of benefit. Development, adaptation and implementation of such programs is only limited by one's patience, imagination and creativity.

An important factor that must be considered when putting any computer-based system together is the minimum configuration of hardware with the software that is being introduced. When considering the implementation of most any voice-activated software program, the faster the processor speed and the larger the RAM (256k), the better the desired results. These programs also require a compatible sound card and a noise-canceling microphone. Today, microphones do not work well in a patrol vehicle environment. The problem is the microphone's inability to completely cancel out all of the background noises. However, the industry knows that this is a problem; and they are working to develop a microphone to address it.

The implementation of a project such as this requires careful and thoughtful planning. A strategy for managing that transition must be established. The foundation of this transition strategy requires the identification of key personnel, the development and implementation of a specific transition plan, and the identification of a transition management structure.

A project of this magnitude, if conducted thoughtfully and inclusively, should involve a large number of individuals initially. These individuals obviously have a stake in the outcome of the project, regardless of whether their roles were limited to a specific area, or their participation was widespread throughout the project. Their primary role up to this point has been to identify and report all the aspects of this project that could affect its success or failure. The results of their findings should be forwarded to those who have the task of making the decisions to proceed and take the project forward to the transition phase. At this phase of the project, the stakeholders should be reduced to the smallest number necessary to ensure that the project moves forward, but not at the expense of turning original stakeholders away from supporting the project. Balance is critical at this point. Too many stakeholders can impede the process of implementation; too few

and/or a poor selection of key individuals in this process could develop a lack of confidence.

Thus, failure could be a possibility.

The implementation of this type of technology can elicit a range of emotions throughout the organization. This range of emotions varies from person to person and can vary from an individual's fear of change from what is expected, or what is considered normal, to a range of excitement that includes learning something new in making one's job easier and safer. When putting a transition plan together, one should incorporate strategies that provide information, solicit and encourage involvement, and make available meaningful training.

Communication within an organization is crucial to its success and credibility. When non-critical information is kept secret, especially on projects that could have a direct impact on one's working environment, it causes a variety of problems that sometimes can never be fully resolved. The lack of information to the rank and file may cause many to speculate, encourage some to draw their own conclusions on misinformation and give rise to rumors. The passing of misinformation in an organization can undermine the best efforts of those who truly intend to improve the working environment for all. Such efforts by those who participate in such discussions should be stopped, and the correct information should be provided when possible. Those involved in the project should make these corrections immediately; and most certainly, those in leadership roles must act decisively to stop the passing of misinformation and rumors.

The best solution for any change or transition in any organization is to involve many, and as early as possible. Regardless of how little one's participation may be, even if it is nothing more than providing information and asking for an opinion, it goes a long way in making a transition easier to progress. Involvement instills a feeling of ownership, which produces the very best salesmen for any change or project to proceed with as little hindrance as possible.



Law enforcement certainly understands the value of training. It is key to the safety of personnel and the efficiency of the organization in the performance of its day-to-day responsibilities. The importance of training cannot be overstated in the success of a project such as this. The absence of meaningful hands-on training during the implementation of this technology project will certainly end in a failed program.

Voice-activated technology is being introduced and utilized in other disciplines, and the potentials for its continued development and use in law enforcement show promise. I have observed some of these applications in action for some of these other industries and feel that law enforcement should not take a wait-and-see approach, just watching what develops. Law enforcement should take an active role in these developments and become one of the primary sources from which voice-activated programs should be fashioned and tested. What better testing ground could one ask for than the inside of a patrol vehicle where the equipment is diverse and plentiful?

History has demonstrated to us that computer technology will continue to evolve and be part of our day-to-day operations in law enforcement now and long into the future. The transition from a No. 2 pencil and paper to our current computerized systems has certainly had its share of failures and challenging moments. Those with a number of years on the job have experienced many days of frustration during some of those various transitions; and they have often found themselves regressing back to the more traditional, proven ways of getting things accomplished.

As time has passed, the officers have become more and more dependent on these systems to access and retrieve the resources they seek with more and more efficiency and ease. The fear of not understanding and manipulating these systems has subsided, as the officers continue to gain more and more confidence in their abilities and desire for instant results. The fear has now

shifted from one's self-confidence to a fear that these systems may crash at any moment, thus completely disrupting one's day. Facing us now is what to do and where to go when these systems fail. Such a dependency has been established on these various systems in our day-to-day operations and their unavailability is so disruptive to the organization that backup systems have been developed and deployed to minimize those negative experiences. For example, just try to assign a beat officer to a patrol vehicle that has an inoperative mobile data computer. Don't be surprised if that officer requests time off if you can't accommodate!

As time passes, and the newer generations of men and women enter law enforcement, they bring more experience and knowledge about technology-based systems. They are very comfortable with their usage and extremely dependent on their availability. These younger generations also bring a wealth of knowledge and information about how these systems can be developed and enhanced. They are a resource that can and should be utilized in taking law enforcement's technology needs to the next level.

Voice technology is that next level in this continuing evolution for the foreseeable future. Applications for its use in vehicles have been, and will continue to be, developed and implemented as the benefits for such use are discovered. As outlined, there are a variety of applications that can be adapted and applied to our day-to-day operations in our patrol vehicles. These applications offer enhanced efficiency and improved safety for the officers while performing their duties.

An a organization, such as ours should actively seek all the tools and resources available or adaptable for our use. Our officers, as well as the communities we serve, expect it and deserve the benefits they have to offer.